

DETAILED ACTION

This is acknowledgement of the receipt of "applicant argument/remarks" filed on 02/08/2008. Claims 1-15, 18-19, and 23 have been cancelled, claims 26-36 have been added as new claims, claims 20 and 24 have been amended from original claims, and claims 16-17, 20-22, and 24-36 are pending in application.

Status of the Precious Rejection

The previous rejection of claims 16, 17, 21, and 22 under 35 U.S.C. 103(a) as being obvious over GB 734,614, thereafter GB'614, in view of Christodoulou et al (US 4,751,048, thereafter US'048) is maintained.

The previous rejection of claims 20, 24-25 under 35 U.S.C. 103(a) as being obvious over GB 734,614, thereafter GB'614 is maintained. The new amended limitation in claims 20 and 24 is addressed as following.

New added claims 26-36 are addressed as following.

Claim Objections

Claims 27-35 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. For instant case, in claims 27-35: "The method of claim 26" should be changed to "The alloy of claim 26", respectively, since claim 26 is a product-by-process claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 17, 21, 22, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 734,614, thereafter GB'614, in view of Christodoulou et al (US 4,751,048, thereafter US'048).

Claims 16, 17, 21, and 22 are rejected on the same ground as stated in the office action of 10/18/2007.

Regarding newly added claim 36, which depends on claim 16, GB'614 in view US'048 teaches the limitation of claim 16 as stated in the office action of 10/18/2007. GB'614 further teaches (Claim 14 of GB'614) a master alloy containing magnesium and from 5 to 40wt% zirconium in finely divided condition, which reads on the limitation of zirconium particles are substantially evenly distributed and suspended in the master alloy as recited in the instant claim.

Claims 20, 24-25, and 26-35 are rejected under 35 U.S.C. 103(a) as being obvious over GB'614.

Claims 20 and 24-25 are rejected on the same ground as stated in the office action of 10/18/2007. The amendment does not change the scope of the limitation. Claims 20 and 24-25 are recognized as product-by-process claims.

Regarding claims 26-35, which are recognized as product-by-process claims, in the absence of the evidence that the process limitations of the instant invention would materially change the properties or structure of the magnesium alloy containing zirconium, the magnesium alloy of GB'614 would be materially similar to the claimed magnesium alloy. SEE MPEP 2113. Therefore, a 103 rejection based on GB'614 would be proper.

2113 Product-by-Process Claims [R-1]

PRODUCT-BY-PROCESS CLAIMS ARE NOT LIMITED TO THE MANIPULATIONS OF THE RECITED STEPS, ONLY THE STRUCTURE IMPLIED BY THE STEPS

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was directed to a novolac color developer. The process of making the developer was allowed. The difference between the inventive process and the prior art was the addition of metal oxide and carboxylic acid as separate ingredients instead of adding the more expensive pre-reacted metal carboxylate. The product-by-process claim was rejected because the end product, in both the prior art and the allowed process, ends up containing metal carboxylate. The fact that the metal carboxylate is not directly added, but is instead produced in-situ does not change the end product.).

Response to Arguments

Applicant's arguments, see "applicant arguments/remarks", filed 02/08/2008, with respect to the rejection(s) of claim(s) 16, 17, 20-22, and 24-25 under 35 U.S.C. 103(a) as obvious have been fully considered but they are not persuasive.

The applicant argues the method of instant invention is different from prior art. In response, all pending claims are product or product-by-process claims, as pointed out in the office action marked 10/18/2007, a materially different process can make the claimed product. Therefore, the prior art searching will not be limited to the method as recited in the instant invention.

The applicant argues GB'614 does not teach 90% of zirconium particle are sized less than 5 microns and are evenly distributed. Christodoulou et al (US'048) can not resolve these deficiencies because US'048 discloses different ceramic/metal system and zirconium is disclosed in US'048 as a "solvent" metal. In response, as pointed out in the previous office action, GB'614 teaches magnesium-zirconium master alloy containing not less than 20% of finely divided zirconium (claim 15 of 'GB614). The size of zirconium particle is recognized as a result-effective variable in term of particle distribution and uniformity in an alloy, which is evidenced by US'048. US'048 teaches the particle size could vary from 0.01 to 5 μ m according to different alloys and temperatures (Table 1, examples 1-29 of '048). US'048 also teaches zirconium is suitable for second phase particles (Col.10, lines 23-39 of US'048). This provides a good motivation to combine prior arts GB'614 with US'048 in order to retain fine grain

size, particle size for resultant superior physical properties of material during recasting and re-melting process (Col.31, line 21-26 of US'048).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jie Yang whose telephone number is 571-270-1884. The examiner can normally be reached on M-F, 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-2721244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

JY